

BBC Learning English
Words in the news
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*World's biggest physics experiment
gets underway*



Scientists are celebrating the successful start up of the world's biggest physics experiment. A team at the European Centre for Nuclear Research near Geneva have managed to circulate a beam in the Large Hadron Collider, the world's biggest atom smasher. Matt McGrath reports:

After a slow and **tentative** start, the scientists here at CERN have finally managed to circulate a beam of **protons** all the way round the 27 kilometre tunnel that houses the Large Hadron Collider. This beam is the size of a human hair and **steering it around the circuit** requires thousands of very powerful magnets, cooled to minus 271 degrees Celsius. Eventually this beam will circulate at almost the speed of light.

Soon, the team here will introduce a second beam travelling in the opposite direction. Within weeks, these beams will be forced **to collide** at several **detection points** around the tunnel. This will generate temperatures many times hotter than the sun, but **focussed in a space** millions of times smaller than **a speck** of dust.

The subsequent **sub-atomic** particles that will be generated will be **analysed in great detail** by researchers all over the world. They believe that in this data will be the evidence that will explain some of the mysteries of the universe, what everything is made of and how **the cosmos** is held together.

Matt McGrath, BBC News, Geneva

Vocabulary and definitions

tentative	not very confident or certain, a little too careful (because you don't know what the result might be)
protons	a term in physics describing a type of smallest existing particles (protons are stable elementary particles that are part of any atomic nucleus and carry a positive charge equal to that of the electron's negative charge)
steering it around the circuit	guiding it around the tunnel
to collide	to hit each other while travelling at a great speed, producing a lot of energy
detection points	places where measuring devices are installed
focussed in a space	contained/concentrated in a space, confined to a volume
a speck	a tiny amount/particle
sub-atomic	particles that are smaller than atoms and are parts of an atom, e.g. protons and electrons
analysed in great detail	studied very carefully for their properties and behaviour
the cosmos	the universe as an orderly system

More on this story: <http://news.bbc.co.uk/2/hi/science/nature/7604293.stm>

Read and listen to the story and the vocabulary online:

http://www.bbc.co.uk/worldservice/learningenglish/newsenglish/witn/2008/09/080910_cern.shtml